CDC Global Health E-Brief

Building Public-Private Partnerships

First Quarter 2009

Welcome to 2009's first quarter E-Brief, designed to inform readers about key global health activities at the Centers for Disease Control and Prevention (CDC). Our first issue of the year demonstrates how the agency has worked with non-traditional public heath partners in the private sector to improve the health of people around the world. Amidst the global economic crisis, public-private partnerships have become a vital way to leverage increasingly limited resources to help respond to country needs, advance progress on U.S. Government global health initiatives, and achieve the greatest possible health impact. ✧

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
Coordinating Office for Global Health

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CDC Foundation Helps CDC Do More, Faster Around the World

CDC scientists battle the world's toughest public health challenges, but rarely do they act alone. They rely on many vital alliances, including partnerships forged through the CDC Foundation, to achieve mutually beneficial goals.

Since 1995, the CDC Foundation has helped CDC connect with foundations, corporations, organizations and individuals to build programs that improve the health and safety of people around the world. A private nonprofit organization established by Congress, the CDC Foundation currently helps facilitate more than 175 active CDC programs in the United States and more than 30 countries.

CDC Foundation partnerships sometimes begin with CDC scientists who have ideas, but lack resources. At other times, organizations recognize that they can better accomplish their own public health goals by working through the CDC Foundation.

"For CDC, building alliances with private sector partners is often critical to moving important work forward. That's why the CDC Foundation exists," said Charles Stokes, president and CEO. "We bring CDC together with organizations interested in the same public health issues, then facilitate and implement meaningful programs to achieve common goals."

For example, Cargill, an international producer and marketer of food, agricultural, financial and industrial products and services, works with the CDC Foundation to fight micronutrient deficiency in the developing world. Cargill provides funding for the Flour Fortification Initiative (FFI), a coalition of CDC and partners that works to increase the vitamin and mineral content in staple foods to prevent anemia and developmental disabilities.

CDC Foundation partners often help CDC engage in public health efforts that the agency does not have the resources to implement on its own. For example, a recent grant from the Bill & Melinda Gates Foundation will help CDC and the World Health Organization (WHO) strengthen disease surveillance and response in developing countries in Central Africa, where disease outbreaks and new emerging infections pose significant health threats. The project will help guide Central African health officials as they investigate, verify and respond to threats.

As one of a number of partners in the Bloomberg Initiative to Reduce Tobacco Use, the CDC Foundation works with experts at CDC and WHO to implement the Global Adult Tobacco Survey (GATS). GATS monitors adult tobacco use and the effectiveness of tobacco control measures in 16 countries that are home to approximately two-thirds of the world's smokers. To date, the survey has been completed in Brazil and Turkey and will be implemented in the remaining countries during 2009. A new round of countries will be selected in 2010.

The Central Africa surveillance and global tobacco survey projects are just two examples of the diverse activities supported by the CDC Foundation. Each project offers CDC greater flexibility, accountability and speed than might otherwise be possible.

"An important part of the Foundation's role in building partnerships is providing accountability and ensuring the successful implementation of programs," said Stokes. "CDC Foundation staff members are directly involved in negotiating project details, hiring people, writing contracts and managing budgets. We offer our partners unparalleled opportunities to join with CDC to fight some of the world's most complex public health problems."

Learn more about CDC Foundation partnership opportunities at www.cdcfoundation.org.✧

The CDC Foundation connects CDC with private sector partners to improve the health and safety of people around the world. As a partner in the Bloomberg Global Initiative to Reduce Tobacco Use, CDC Foundation works with experts at CDC and the World Health Organization (WHO) to implement the Global Adult Tobacco Survey (GATS) in 16 countries that account for approximately two-thirds of the world's smokers, including Bangladesh.

CDC and Rotary International: Partnering to End Polio

For only the second time, since smallpox was successfully eradicated in 1977, the world has the chance to eradicate a deadly virus and bring an end to the suffering and deaths associated with it. Today, polio is on the cusp of similar success.

One of the most successful public-private partnerships in history, the global polio eradication initiative was launched in 1988 by CDC, Rotary International, the United Nations Children's Fund (UNICEF), and the World Health Organization (WHO). In the 20 years since then, the number of polio cases has been reduced by more than 99%, from 350,000 cases per year to fewer than 1,700 in 2008. In 2009, the number of polio-endemic countries has fallen from 125 to only four—Afghanistan, India, Nigeria, and Pakistan.

Since 1988, when CDC joined forces with the World Health Organization, UNICEF, and Rotary International, the number of cases around the world has dropped dramatically. All four partners were recently inducted into the Polio Hall of Fame. Shown here (Left to Right) are Carol Pandak, PolioPlus program manager, Rotary International; Werner Obermeyer, deputy director, WHO UN Headquarters; Anne Schuchat, Interim Deputy Director for Science and Program, CDC; and Ahmed Magan, senior health advisor & chief of Immunization, UNICEF.

Through a combination of fund-raising, advocacy, and volunteerism, Rotary, the private partner among the founding organizations of the partnership, has played a critical role in the extraordinary progress towards polio eradication. Rotary is the world's largest humanitarian service organization, with 1.2 million business and professional leaders in a global network of 33,000 clubs. Rotary members have contributed nearly $800 million for purchase of polio vaccine, operational costs for large-scale vaccination campaigns, medical personnel, surveillance, and lab equipment. Rotary has also helped influence donor governments to contribute more than $3 billion to the initiative. The United States is the largest government donor, providing more than $1.5 billion.

In January 2009, the Bill & Melinda Gates Foundation awarded to Rotary a $255 million challenge grant to fight polio, which Rotary will match with $100 million raised by its members over the next three years. Announcing the award, Bill Gates said, "Rotary in particular has inspired my own personal commitment to get deeply involved in achieving eradication."

CDC and WHO are lead technical partners in the initiative. CDC assigns public health experts to WHO and UNICEF regional and country offices, where they hold leadership positions in polio and immunization programs. CDC also provides funds for oral polio vaccine required for large-scale vaccination campaigns, and serves as the "viral detective" among the partners—CDC scientists use their expertise to identify the strain of poliovirus involved in a case and pinpoint its exact geographical origin, providing essential information about actions to take to stop the virus' spread.

Rotary International complements CDC and WHO technical expertise through its huge network of volunteers working hand-in-hand with CDC and WHO. With the motto "Service Above Self," more than 1 million Rotary International members worldwide have rolled up their sleeves as volunteers in the fight against polio. The volunteers pay their own travel expenses on such trips; they return with first-hand experience of the program and share their stories with their home Rotary clubs. In January 2009, a marketing and management consultant from south Florida led a team of 42 Rotary volunteers to India to help vaccinate children against polio—her third such trip. An insurance agent in Seattle has led Rotary volunteer teams to his native Ethiopia to immunize children with the oral polio vaccine.

Rotary and CDC are very much partners on the ground, collaborating closely on several specific projects to support the initiative.

For example, during the first campaigns against polio in war-torn southern Sudan, Rotary started an emergency response initiative that allowed funds to be raised rapidly in times of outbreaks or other program emergencies. CDC has helped advise Rotary about public health priorities and technical issues for the use of these funds. Another example is the initiation by CDC staff, in cooperation with the CDC Foundation, of the Polio Eradication Heroes Fund to provide recognition and a stipend to surviving family members when volunteers in polio-endemic countries were killed while conducting eradication activities. Rotary is the single largest donor to this fund and advises the CDC Foundation about deserving volunteers who should be considered for this award. Through 2008, 74 awards totaling $73,800 have been given to surviving families through the Heroes Fund.

"The impact of the CDC-Rotary partnership has been demonstrated in hundreds of ways—from supporting short-term technical experts to implement the Global Polio Eradication Initiative in dozens of countries to recognizing those who have been injured or lost their lives carrying out polio immunization activities," says Carol Pandak, manager of the PolioPlus program at Rotary International.

While work remains until polio is completely eradicated, the public-private partnership to end polio has directly affected the lives of many in developing countries. The cumulative efforts of all the partners have meant that more than 250,000 deaths have been prevented and 5 million children are walking today who otherwise would have been paralyzed. ✧

Innovative New Technology Shows Promise in Assessing Populations Affected by Natural, Other Disasters

It's a bird, It's a plane. It's a kite. It's a blimp. It's a helicopter.

When you take away the bird you have four examples of flying objects that have all been used to test an exciting new surveillance platform in the works at CDC.

Since 2006, CDC has worked with the Georgia Institute of Technology to develop a low-cost, high-resolution device that produces images for population assessment in disasters. The idea is to develop a convenient and easy way to get near real-time aerial photos during complex humanitarian emergencies.

The Modular Photographic Observational Device, or "ModPod," idea grew out of a need to conduct rapid assessments after disasters so that responders can plan an effective response.

"You could apply the surveillance platform to just about anything," says CDC's Steve Bullard, an environmental health scientist. "In addition to refugee data, it can be used to rapidly collect images of chemical spills, terrorist events, or other events for which photos of what has happened on the ground are needed."

Following a natural or man-made disaster, hundreds of thousands of people can be dislocated. For example, when the category 3 cyclone, Nargis, made landfall in Burma it caused more than 85,000 deaths and displaced more than 800,000 people. When events like this occur, public health responders need a good estimate of the population size in the affected area to plan rations, shelter, water, and the provision of healthcare services. The ModPod could have been used to photograph the affected area to determine the magnitude of the devastation and assist in establishing the needs of the people. Population estimates are also essential when conducting surveys and outbreak investigations.

Initially, the CDC team that developed the ModPod tried using satellite imagery to gather data on refugee camps, but quickly ran into obstacles. Satellite imagery is expensive. Coverage over remote areas can be infrequent. Clouds limit visibility. And, a significant time lag often occurs between the collection of a satellite image and its release to non-US government partners and disaster responders. CDC recognized that these challenges could largely be overcome by using an inexpensive aerial camera and a system to link the resulting photos.

Because the United Nations frequently flies helicopters in areas affected by complex humanitarian emergencies, CDC decided to build a modular system that could be suspended from helicopter skids. This modular system can be configured in different ways, with different lenses and capabilities, depending on available resources. For example, an "infrared" lens could be added to detect heat sources, or a low-cost optical lens can be used to capture imagery. The team approached several universities to discuss collaboration and ultimately developed a close partnership with the Georgia Tech Research Institute, which took the lead on technical design, wiring, and system integration.

CDC's Steve Bullard tests an early version of the ModPod on the CDC remote-controlled airship. The photo was taken during the 3-day Georgia Breast Cancer Walk in 2006.

Using an inexpensive camera and a housing unit typically used to carry alpine ski equipment, the ModPod relies on a geographic positioning system (GPS) to "tell" the camera when it is flying over an area of interest. Once inside that zone, the camera begins taking overlapping pictures. The camera stops when the ModPod leaves the area. When the helicopter lands, the pictures are downloaded onto a laptop. A composite image of the entire zone is created using commercial software. The system even allows users to re-create the ModPod flight path in GoogleEarth. Using the resulting mosaic image, the team is now working to refine methods of conducting rapid population estimates.

In August 2008, the ModPod was flown over Oglethorpe University, Atlanta, GA, in one of many ongoing system tests. The ModPod successfully took pictures of students in the stadium, cars, trees, and even backpacks on an open field. The camera resolution is not sufficient to capture individual faces.

What's next? The group continues to test and improve the system so that it can be ready for use in the event of a public health emergency. For this new technology, the sky's the limit!✧

Partnership with Merck and GlaxoSmithKline Gets Essential Drugs to People at Risk of Tropical Diseases

In a quiet, dusty village in Togo—a resource-poor country of some 5 million people in west Africa—lies the seed of what for many is only a dream: a chance to break the cruel cycle of poverty and disease.

That seed is a model program that successfully integrates public health interventions to control Guinea worm disease, malaria, and a group of neglected tropical diseases (NTDs): lymphatic filariasis (elephantiasis); trachoma (eye infection); soil-transmitted helminths (hookworm, roundworm, whipworm); and schistosomiasis (snail fever). These NTDs cause substantial disability or poor health for hundreds of millions of people around the world. In addition to causing physical and emotional suffering, these debilitating and disfiguring diseases hamper worker productivity, keep children out of school, and prevent families and communities from thriving.

The Togo program is simple and community-driven. Villagers are given three drugs once a year to prevent disease transmission. At the annual visit, pregnant women with young children are encouraged to buy bed nets at low cost for prevention of malaria and other insect-carried diseases such as lymphatic filariasis. The women are also reminded to report any case of Guinea worm disease, an NTD that has been virtually eliminated in Togo.

What makes this program a success? It is effective, inexpensive, and sustainable.

The low cost of the program ($0.22 per person during the first year and $0.10 per person each year after) is possible because of a partnership between CDC, Merck, and GlaxoSmithKline to eliminate NTDs using a strategy of mass drug administration.

Today, because of the generosity of Merck and GlaxoSmithKline, who are providing free drugs "for as long as needed" and funding for coalition building, increasing numbers of governmental and non-governmental organizations are joining philanthropic groups such as the Gates Foundation to provide a low-cost, rapid impact package of essential NTD drugs to the bottom billion of the poorest people—what some public health experts consider "the best bargain in public health."

CDC has long played a critical role in the eradication, elimination, or control of these diseases through its technical expertise in epidemiology, entomology, immunology, and molecular diagnostics. CDC scientists have contributed to the mapping of these diseases, studied the physical damage they cause, studied ways to prevent them and, in the case of lymphatic filariasis, studied ways to treat its long-term disabling and disfiguring effects. CDC also contributes its expertise in monitoring and evaluating the interventions.

Dr. Els Mathieu, a CDC scientist who studies NTDs, has spent months in Togo with the Ministry of Health training, advising, monitoring, and evaluating the concept of integrated disease management. With tools now available to eliminate and control these diseases, she helped shepherd the program into success. She knew it could work. "The solutions are here. The partners are on board."

Dr. Els Mathieu, a CDC scientist, works with community members on integrated disease management in Togo.

In fact, evaluation of the model program of integrated interventions has shown that 80% of the population in the targeted districts has received drug coverage for four diseases: onchocerciasis, lymphatic filariasis, soil-transmitted helminths, and schistosomiasis. In addition, evidence indicates that Togo may be the first African country to interrupt transmission of lymphatic filariasis.

After seeing the initial success, "the Togolese are anxious to scale up the program so the entire country can benefit," Mathieu adds.

It is hoped the program will become a model for the entire country of Togo and eventually all of West Africa. ✧

Public-Private Partnership Strengthens Laboratory Systems in Fight against AIDS and Tuberculosis

With more than 33 million people in the world living with HIV and 2.7 million new HIV infections each year *(UNAIDS 2008 Report on the Global AIDS Epidemic),* prevention and control efforts can seem daunting even in the best of settings. Yet weaknesses in the health care systems in most countries supported by the President's Emergency Plan for AIDS Relief (PEPFAR) are enormous and no single entity—governmental, non-governmental organization, or industry—can meet these challenges alone.

A partnership between PEPFAR and Becton, Dickinson and Company (BD), a leading global medical technology company with laboratory expertise, is maximizing limited resources and helping to build robust, sustainable laboratory facilities.

In the fight against HIV/AIDS in Africa, a strong laboratory system is critical for proper prevention, treatment, and care. Laboratory data are essential to accurately assess the status of patients' health, make accurate diagnoses, plan a course of treatment, and subsequently monitor the effects of treatment. Health care workers must be able to trust that laboratory test results are accurate, reliable and timely.

In October 2007, PEPFAR—through CDC and BD—launched a five-year public-private partnership, the first of its kind, to improve overall laboratory systems and services in African countries severely affected by HIV/AIDS and tuberculosis (TB).

With up to $18 million in funding, the partnership is being initiated in eight African countries: Côte d'Ivoire, Ethiopia, Kenya, Malawi, Mozambique, South Africa, Tanzania, and Uganda. The strategy includes three key components:

- laboratory-strengthening programs built on National Laboratory Strategic Plans tailored to meet specific country needs;
- fellowship programs for BD associates to share their expertise with implementing partners, and
- short-term technical assistance by both BD and PEPFAR partners to provide laboratory training at multiple levels within a country.

The collaboration is greatly leveraging the level of assistance offered to all PEPFAR-supported countries in Africa, and is preparing more health care workers to provide quality HIV testing and improved TB diagnoses. In Uganda, for example, CDC and BD are using Global Positioning System/Global Information System (GPS/GIS) technology to map multiple laboratory sites with the goal of developing a transportation network and monitoring specific improvements in the identified laboratories.

According to John Nkengasong, a CDC scientist and co-chair of the PEPFAR Laboratory Technical Working group, "The PEPFAR-BD partnership has taken the lead in Uganda to strengthen laboratory systems by developing quality management and specimen transport referral systems. These efforts will go a long way to improve the care people receive, and ultimately their health."

The collaboration with BD is one more example of how public-private partnerships effectively link resources and technology in the private sector with scientific expertise in the public health community. These partnerships are critical for scaling up what works, building capacity of governments and local organizations, and creating sustainable programs – all essential steps needed to help move the AIDS response forward and enable communities and countries to change this epidemic's deadly course. ✧

Participants from Nigeria and Ethiopia watch as specimens are logged in before processing for TB cultures during the lab strengthening training.

Update: Child Violence Survey in Swaziland Spurs Government to Establish the Sexual Offenses Unit

The third quarter 2007 Global Health E-Brief featured an article on a United Nations Children's Fund (UNICEF) and CDC survey to determine the rates of violence against young people in Swaziland. The results of this survey revealed alarming rates of violence against children, including one in three females between the ages of 13 and 24 suffering from some form of sexual violence during childhood. As a result of this survey a new Sexual Offenses Unit for children and young people has been established. The launch of this unit is the first step towards developing comprehensive care for victims of sexual exploitation, violence, and abuse in Swaziland. For more information please visit: http://www.unicef.org/protection/swaziland_46978.html

Update: Cholera Outbreak in Zimbabwe

As of March 12, 2009, the World Health Organization (WHO) Office in Zimbabwe and the Ministry of Health report that there are 89,930 suspected cases of cholera with 4,049 deaths. This is an increase of 56,351 cases and 2,378 deaths since the report in the last Global Health E-Brief (Fourth Quarter, 2008). CDC deployed a health communicator in December 2008 to assist with informational/educational messages, and in March 2009 is deploying a medical epidemiologist based in Kenya, as part of a WHO Global Outbreak and Alert Response Network (GOARN) team, to provide further technical assistance in the outbreak. CDC remains in contact with its staff in the region in Mozambique, South Africa, Zambia, and Zimbabwe, and is working with WHO and other global health partners to further monitor this situation and assist when possible.

"A Lion in Our Village - The Unconscionable Tragedy of Cholera in Africa"

"A Lion in Our Village - The Unconscionable Tragedy of Cholera in Africa", published in the March 12th edition of the New England Journal of Medicine, details the burden of cholera in Zimbabwe and other surrounding African countries in the past year. Rarely seen in the United States, cholera used to be endemic in South Asia before oral rehydration therapy was introduced and reduced the fatality rate from 30 percent to less than 1 percent. After a century-long absence, a cholera epidemic in Latin America in the 1990s was met with swift investment in drinking water, sanitation and health care.

The sanitation and treatment revolutions have not made the same progress in Africa, where there have been more than 92,000 cases and 4,000 deaths due to cholera since November 2008 in Zimbabwe alone. The epidemic shows no signs of slowing and has spread to other countries.

Dr. Eric Mintz, a CDC scientist with expertise in diarrheal diseases, and Dr. Richard L. Guerrant, Director of the Center for Global Health at the University of Virginia, School of Medicine, point to a lack of safe drinking water, sanitation, and hygiene facilities as the underlying causes of spread of the epidemic, and inadequate access to basic health care services and supplies as the cause of the high mortality rate. A waterborne disease, cholera is the result of inadequate treatment of sewage or drinking water. The article can be accessed at http://content.nejm.org/cgi/content/full/360/11/1060

Rabies Partnership Expands Education Efforts with Help of Google

Since 2006, CDC has partnered with the Alliance for Rabies Control (ARC) to help promote rabies education worldwide. As part of the collaboration, CDC has assisted with the development of public health education materials for rabies education campaigns in Latin America, Africa, and Asia. The ARC recently received a grant from Google to expand its marketing campaign around human rabies prevention and animal rabies control, and in particular, its efforts focused around World Rabies Day which occurs this year on September 28. Currently, it is estimated the Alliance is communicating prevention messages into 190 countries. For information about ARC, please visit http://www.rabiescontrol.net/